

REMARKS

Claims 1-27 are pending and stand rejected.

The Office Action rejected claim 1-27 under 35 USC 102(b) as being anticipated by Goel et al., United States Patent No. 5,960,427.

With respect to claim 1, the Office Action maintained that “Goel’s teachings of a transform Groupby (i.e. 504) includes the identity of group values as illustrated in applicants claim language.” Office Action at pg. 4, ¶ 4. Goel does not teach or suggest identifying one or more groups of consecutive values in a set, where the “set” is a set of values that is linked to a database column by multiple alternative equality conditions in a query, as required by independent claims 1, 10, and 19. Claims 1 and 19 have been amended to clarify that the set of values linked to a database column by multiple alternative equality conditions is in a query. That was clear in claim 10.

As a simplified example of one possible operation of this method (see Figs. 4-7 and accompanying text in the specification for a general description), consider:

Table “t1” includes a column “a,” denoted as t1.a, that allows only integer values.

Query “Q1” is SELECT . . . WHERE t1.a = 5 OR t1.a=6 OR t1.a=7 OR t1.a=12. . .

Q1 contains multiple alternative equality conditions (t1.a = 5, t1.a = 6, t1.a = 7, which are equality conditions, with OR operators between them, which means they are “alternative”)) between a database column (t1.a) and a set of values (5, 6, 7, and 12). The method would proceed by “identifying one or more groups of consecutive values in the set” (5, 6, and 7 are consecutive because only integers are allowed), “removing equality conditions corresponding to the values in one or more of the identified groups” (removing “t1.a = 5 OR t1.a=6 OR t1.a=7” from Q1) and “adding one or more inequality conditions corresponding to the one or more of the

identified groups” (adding “5<= t1.a <= 7” to Q1) resulting in the following query, which could then be executed:

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SELECT . . . WHERE 5<= t1.a <= 7 OR t1.a=12. . .
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The optimization operation, which is performed before the query is executed, has removed three equality conditions and replaced them with a single inequality condition.

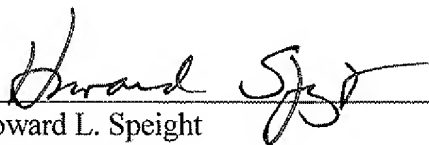
Goel et al. do not teach or suggest any such method. The GROUPBY operator is part of a query and does not describe an operation that occurs before the query is executed. Goel et al. address the problem of “complete enumeration of queries containing outer joins, when the outer join predicate references an aggregated value [using a GROUPBY clause for example], or the predicate references more than two base relations in a query subtree.” Col. 3, lines 14-18. Thus, Goel et al. are concerned with characterizing a query containing a GROUPBY operator, not in using the GROUPBY operator to optimize a query prior to execution.

Thus, independent claims 1, 10, and 19 are patentable over Goel et al. The dependent claims all depend from claim 1, 10 or 19 and are patentable for at least the same reasons.

SUMMARY

Applicant contends that the claims are in condition for allowance, which action is requested. Applicant does not believe any additional fees beyond the fee for the one-month extension of time are necessary with the submitting of this response. Should any additional fees be required, Applicant requests that the fees be debited from deposit account number 14-0225, Order Number 11378.

Respectfully submitted,



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